

LISTING OF CLAIMS

1(currently amended). A process for applying a multilayer protective coating to a substrate having an electrically conductive surface, comprising:

a first method of forming a silicate layer upon said electrically conductive surface, said first method comprising contacting at least a portion of said surface with a first medium comprising at least one silicate, water and having a basic pH and wherein said first medium is substantially free of chromates, to form a silicate layer, and

a second method of electrolytically applying a synthetic resin layer upon the surface of said silicate layer, said second method comprising contacting at least a portion of said surface of said silicate layer with a second medium comprising a resinous ingredient, applying an electric current to said second medium wherein said surface is employed as an electrode, to form a synthetic resin layer.

wherein said second method further comprises drying said synthetic resin layer at a temperature of about 180 to about 250 °C.

2(previously presented). The process of claim 1, wherein said substrate is a metal substrate.

3(previously presented). The process of claim 1 or 2, wherein said substrate comprises at least one metal substrate selected from the group consisting of steel, zinc or zinc/nickel coated steel, aluminum, zinc or zinc/nickel coated aluminum, iron, zinc or zinc/nickel coated iron, nickel, copper, zinc, magnesium, and combinations thereof.

4(previously presented). The process of any one of claims 1 or 2, wherein said first method further comprises introducing an electric current to said first medium wherein said surface is employed as a cathode.

5(previously presented). The process of any one of claims 1 or 2, wherein said first medium is an aqueous medium.

6(currently amended). The process of any one of claims 1 or 2, wherein the pH of said first medium is [adjusted to] a value of about 10 to about 11.5.

7(previously presented). The process of any one of claims 1 or 2, wherein said first medium contains sodium silicate.

8(currently amended). The process of any one of claims 1 or 2, wherein said first medium contains silicate in a concentration of about 1 to about 25 wt.%, [in particular] optionally about 5 to 15 wt.%.

9(previously presented). The process of any one of claims 1 or 2, wherein in said first method said silicate layer is applied at a thickness of about 100 to about 2500 Angstroms.

10(previously presented). The process of any one of claims 1 or 2, wherein said first method further comprises:

rinsing the surface; and
drying the surface.

11(previously presented). The process of any one of claims 1 [[to 10]] or 2, wherein said second medium is an aqueous medium.

12(previously presented). The process of any one of claims 1 or 2, wherein said resinous ingredient in said second method comprises a resin selected from the group consisting of cathodically applied electrocoating epoxy resins, anodically applied electrocoating epoxy resins, cathodically applied electrocoating acrylic resins, and anodically applied electrocoating acrylic resins.

13(previously presented). The process of any one of claims 1 or 2, wherein said resinous ingredient in said second medium comprises a cationic resin and a crosslinking agent.

14(previously presented). The process of any one of claims 1 or 2, wherein said resinous ingredient in said second medium comprises a cathodically applied blocked isocyanate epoxy resin.

15(currently amended). The process of any one of claims 1 or 2, wherein the pH of said second medium is [adjusted to] a value of from about 4.5 to about 6.5.

16(previously presented). The process of any one of claims 1 or 2, wherein said surface in said second method is employed as cathode.

17(currently amended). The process of any one of claims 1 or 2, wherein said second medium contains said ionic resinous ingredient in a concentration of about 1 to about 25 wt.%, [in particular] optionally about 5 to about 15 wt.%.

18(currently amended). The process of any one of claims 1 or 2, wherein in said second method said synthetic resin layer is applied at a thickness of about 5 to about 25 microns, [in particular] optionally about 8 to about 15 microns.

19(previously presented). The process of any one of claims 1 or 2, wherein said second method further comprises drying said synthetic resin layer.

20(withdrawn). The process of any one of claims 1 or 2, wherein said second method further comprises drying said synthetic resin layer at a temperature of about 180 to about 250 °C.

21(previously withdrawn).

22(previously withdrawn).

23(previously withdrawn).

24(previously withdrawn).

25(previously withdrawn).

26(previously withdrawn)

27(previously presented). The process of claim 12 wherein said resin comprises a resin selected from the group consisting of cathodically applied electrocoating epoxy resins, and anodically applied electrocoating epoxy resins,.

28(previously withdrawn).

29(previously withdrawn).

30(previously withdrawn).

31(previously withdrawn).

32(previously withdrawn).

33(previously withdrawn).

34(previously presented). The process of claim 1 wherein said first medium is substantially phosphate free.

35(currently amended). The process of claim 1 wherein said substrate with a multilayer protective coating has an ASTM B117 exposure to white rust of greater than 200 hours.

36(previously presented). A process for coating to a substrate having an electrically conductive surface, comprising:

a first method of forming a silicate layer upon said electrically conductive surface, said first method comprising contacting at least a portion of said surface with a first medium comprising at least one silicate and having a basic pH and wherein said first method further comprises introducing an electric current to said first medium wherein said surface is employed as a cathode and wherein said first medium is substantially free of chromates and phosphates thereby forming a silicate containing layer upon the substrate, and

a second method of electrolytically applying a synthetic resin layer upon the surface of said silicate layer, said second method comprising contacting at least a portion of said surface of said silicate layer with a second medium comprising a resinous ingredient, applying an electric current to said second medium wherein said surface is employed as a cathode, to form a synthetic resin layer comprising a blocked isocyanate epoxy resin.